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Oliffe, J. L., Hannan-Leith, M. N., Ogrodniczuk, J. S., Black, N., Mackenzie, C. S., Lohan, M., & Creighton, G. (2016). Men's depression and suicide literacy: A nationally representative Canadian survey . *Journal of Mental Health*. <https://doi.org/10.1080/09638237.2016.1177770>

**Published in:**  
Journal of Mental Health

**Document Version:**  
Publisher's PDF, also known as Version of record

**Queen's University Belfast - Research Portal:**  
[Link to publication record in Queen's University Belfast Research Portal](#)

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**To cite this article:** John L. Oliffe, Madeline N. Hannan-Leith, John S. Ogrodniczuk, Nick Black, Corey S. Mackenzie, Maria Lohan & Genevieve Creighton (2016): Men's depression and suicide literacy: a nationally representative Canadian survey, *Journal of Mental Health*, DOI: [10.1080/09638237.2016.1177770](https://doi.org/10.1080/09638237.2016.1177770)

**To link to this article:** <http://dx.doi.org/10.1080/09638237.2016.1177770>



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Published online: 29 Apr 2016.



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ORIGINAL ARTICLE

## Men's depression and suicide literacy: a nationally representative Canadian survey

John L. Oliffe<sup>1</sup>, Madeline N. Hannan-Leith<sup>2</sup>, John S. Ogrodniczuk<sup>3</sup>, Nick Black<sup>4</sup>, Corey S. Mackenzie<sup>5</sup>, Maria Lohan<sup>6</sup>, and Genevieve Creighton<sup>7</sup>

<sup>1</sup>School of Nursing, University of British Columbia, Vancouver, BC, Canada, <sup>2</sup>Department of Educational and Counselling Psychology, and Special Education, University of British Columbia, Vancouver, BC, Canada, <sup>3</sup>Department of Psychiatry, University of British Columbia, Vancouver, BC, Canada, <sup>4</sup>Intensions Consulting, Vancouver, BC, Canada, <sup>5</sup>Department of Psychology, University of Manitoba, Winnipeg, MB, Canada, <sup>6</sup>School of Nursing and Midwifery, Queen's University, Belfast, Ireland, and <sup>7</sup>Department of Pediatrics, University of British Columbia, Vancouver, BC, Canada

### Abstract

**Background:** Male suicide prevention strategies include diagnosis and effective management of men's depression. Fundamental to suicide prevention efforts is public awareness, which in turn, is influenced by literacy levels about men's depression and suicide.

**Aim:** The aim of this study is to examine sex differences in mental health literacy with respect to men's depression and suicide among a cohort of Canadian respondents.

**Methods:** About 901 English-speaking Canadian men and women completed online survey questionnaires to evaluate mental health literacy levels using 10-item D-Lit and 8-item LOSS questionnaires, which assess factual knowledge concerning men's depression and suicide. Statistical tests (Chi-square, z-test) were used to identify significant differences between sex sub-groups at 95% confidence.

**Results:** Overall, respondents correctly identified 67% of questions measuring literacy levels about male depression. Respondents' male suicide literacy was significantly poorer at 53.7%. Misperceptions were especially evident in terms of differentiating men's depressive symptoms from other mental illnesses, estimating prevalence and identifying factors linked to male suicide. Significant sex differences highlighted that females had higher literacy levels than men in regard to male depression.

**Conclusions:** Implementing gender sensitive and specific programs to target and advance literacy levels about men's depression may be key to ultimately reducing depression and suicide among men in Canada.

### Keywords

Depression and suicide literacy, men's depression, male suicide, masculinity

### History

Received 29 June 2015

Revised 17 December 2015

Accepted 10 March 2016

Published online 28 April 2016

### Background

Male suicide prevention strategies include diagnosis and effective management of men's depression (Oliffe & Phillips, 2008). Fundamental to suicide prevention efforts is public awareness, which in turn, is influenced by literacy levels about men's depression and suicide. Indeed, knowledge about mental health literacy is central to understanding and addressing the needs of individuals and communities (Kutcher et al., 2015). For example, low levels of mental health literacy are linked to reduced knowledge about depression and suicide and reduced likelihood to engage services and/or treatment[s] (Gabriel & Violato, 2010). In turn, improving mental health literacy can increase well-being

and help-seeking attitudes for depression and/or suicidal behaviors (Gulliver et al., 2012).

### Men's depression and suicide and mental health literacy

Western men's low levels of diagnosed depression and high suicide rates have informed an array of studies addressing men's mental illnesses (Oliffe & Phillips, 2008). For example, implicated in men's low rates of diagnosed depression are the limitations of generic depression screening tools along with men's reticence and/or inability to fully engage professional mental health services (Wide et al., 2011). Research also indicates that Canadian men are less likely to report intentions to seek professional help for mental health problems, perhaps because they have less positive attitudes toward treatment seeking than women (Mackenzie et al., 2006). An Australian study highlighted the need to address barriers to help-seeking in males with severe mental illness disorders (Harris et al., 2015), a recommendation echoed in a European Union study (Kovess-Masfety et al., 2014). Detailed also have been the positive influence that family and friends can have on men's

Correspondence: John L. Oliffe, PhD, School of Nursing, University of British Columbia, 109-2176 Health Sciences Mall, Vancouver, BC, Canada V6T 1Z3. Tel: +1 604 822 7683. E-mail: john.oliffe@nursing.ubc.ca

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help-seeking and self-management of depression and/or suicide prevention (Oliffe et al., 2011a, 2012). Common to this emergent work is the centrality of mental health literacy, and its operationalization toward advancing men's help-seeking and informing gender-specific and sensitive services to better address male depression and suicide.

Nutbeam (2008) suggested health literacy is requisite to effective health promotion because self-health is heavily reliant on one's ability to access, interpret and incorporate health and illness information. Mental health literacy, defined as "knowledge and beliefs about mental disorders, which aid in their recognition, management, or prevention" (Jorm et al., 1997, p. 182) consists of several components, including awareness of depression and suicide, beliefs and perceptions about risk factors, and attitudes towards self-health and the uptake of professional health care services (Gabriel & Violato, 2010). Low levels of mental health literacy, for example, can fuel misconceptions and increase stoicism and stigma round men's depression and suicide (Gabriel & Violato, 2010). Indeed, the general public's mental health literacy levels strongly influence the help-seeking and self-management efforts of men who experience depression and/or are at risk of suicide (Griffiths et al., 2008; Jones et al., 2011; Wang & Lai, 2008). For example, an Australian study reported that males showed significantly lower recognition of symptoms associated with mental illness and were more likely to endorse the use of alcohol to deal with mental health problems (Cotton et al., 2006). Similarly, compared with females, men's responses to mental illness vignettes revealed their lower levels of mental health literacy (Gibbons et al., 2015; Swami, 2012). The connectedness of mental health literacy and the application of knowledge to promote well-being and recognize and rectify mental illness affirm the importance of better understanding and addressing male depression and suicide literacy (Peerson & Saunders, 2009). The current study aim was to describe and compare by sex, literacy levels about men's depression and suicide among a cohort of Canadian respondents, as a means to making recommendations for future research.

## Methods

### Study instruments

Because there are no sex-specific measures of male depression and suicide literacy, we adapted existing tools, the Depression Literacy Questionnaire (D-Lit; Griffiths et al., 2008) and the Literacy of Suicide Scale (LOSS; Calcar et al., 2012), for the current study. The D-Lit had acceptable internal consistency in the present study, with Cronbach's alpha of 0.74. Internal consistency was not reported for the LOSS, as it is a knowledge scale (e.g. there are correct/incorrect answers) rather than an attitudinal scale. Scales were adapted to fit a sex-specific context and for short form self-administration. Our questionnaires were adapted using an iterative approach. Items were removed if they focused on technical questions around treatment effectiveness or treatment sources (e.g. "Cognitive behavioral therapy is as effective as antidepressants for mild to moderate depression"), if they were not applicable to the context of men's depression and suicide, or did not provide additional information or distinction from

other items. For example, the item "people who talk about suicide rarely kill themselves" was removed because it provided similar information to the item "men talking about suicide always increase the risk of suicide". Twelve of the 22 items were removed from the D-Lit, and 10 remained. All remaining items with sex-neutral words like "people" were replaced with "men" or had the word "men's" inserted. The D-Lit was used to gather respondents' knowledge about men's depression including common symptoms, soliciting "true", "false", or "don't know" responses to 10 items. Each correct response was assigned 1 point and false/don't know responses were assigned 0 points, so that the higher the score the higher the respondent's depression health literacy. The modified LOSS retained eight of 12 items for which sex-neutral words like "people" were replaced with "men". The modified LOSS solicited "true", "false", or "don't know" responses. Again, higher scores indicated higher suicide literacy levels.

### Recruitment procedures

Following University ethics approval, respondents were sourced from an online panel provider (Research Now Canada) and screened to ensure they met survey eligibility requirements (18 years and older, had online access, and were able to read English). The survey topic was not disclosed in the initial panel invitation, and only potential respondents who went to the survey introduction page were advised that men's depression and suicide were the focus. Of the 2108 people who went to the introduction page, a total of 311 (14.8%) answered "no" to the opt-in, and 1797 answered "yes" to opt in (and this was further reduced to 901 by post opt-in screening/quotas etc.). Specifically, the sample was stratified and weights were employed to balance demographics, ensuring that the sample's composition reflected the general Canadian population as determined by Census data. Some potential participants were turned away based on geographic location, sex and age if specific quotas had already been filled. Respondents received an honorarium, either Air Miles or Research Now points, which could later be exchanged for various rewards. While sampling error cannot be estimated for non-probability samples such as ours, a traditional unweighted probability sample of comparable size would have produced results considered accurate to within plus or minus 4.6 percentage points, 19 times out of 20. The 8-min online survey was administered between 29 August and 11 September 2014.

### Sample

A total of 901 English-speaking Canadian adults completed the survey and the sample composition reflected the general Canadian population as determined by Census data. Comprising 452 males (50.2%) and 449 females (49.8%) residing in Western ( $n = 456$ ; 50.6%) and Eastern ( $n = 445$ , 49.4%) Canada, respondents ranged in age from 18 to 83 years old (mean = 50.5) and were aggregated to three age range groups; 18–29 ( $n = 225$ ; 25.0%), 30–54 ( $n = 379$ ; 42.1%), and 55 and older ( $n = 297$ ; 33.0%). The majority of respondents were employed ( $n = 610$ ; 67.7%), with 170 (18.9%) reporting that they were retired, 43 (4.8%) were students, 36 (4.0%) were stay-at-home caregivers, 29 (3.2%) were seeking employment, and 28 (3.1%) were unable to work. While 355 (39.4%)

respondents identified that they themselves had experienced depression or non-fatal suicidal behaviors, 531 (58.9%) had no personal experience with depression or suicide. Fifteen (1.7%) respondents did not disclose this information. Many respondents ( $n = 643$ ; 71.4%) reported having male friends or family with depression or lost to suicide.

Data analysis

Data weightings based on 2011 Census for age, sex, and province were applied to correct for this over/under sampling and to provide proportional representation to the survey findings. Statistical tests (Chi-square,  $z$ -test) were used to identify statistically significant differences between sex sub-groups at 95% confidence using the Statistical Package for the Social Sciences (SPSS – Version 23, SPSS Inc., Chicago, IL).

Results

Depression literacy

Overall, 67.1% of the responses to the D-Lit questionnaire were correct, while 12.7% were incorrect, and the proportion of “don’t know” responses was 20.2% (Figure 1). Items with the highest proportion of correct answers were, “loss of confidence and poor self-esteem may be a symptom of men’s depression” (89.8%) and “sleeping too much or too little may be a sign of men’s depression” (82.8%). A high proportion of respondents also correctly recognized that “many famous men have suffered from depression” (82.5%). Two items stood out as drawing a high proportion of incorrect and “don’t know” responses: “having several distinct personalities may be a sign of men’s depression” (38% incorrectly answered ‘yes’ and 31.8% responded ‘don’t know’) and “men with depression often speak in a rambling and disjointed way” (23.2% incorrectly answered “yes” and 41.5% responded “don’t know”). A large proportion of respondents (38.6%) also indicated “don’t know” to the item, “men with depression often hear voices that are not there”.

When examining the responses of men and women separately, a  $z$ -test performed at 95% confidence indicated that the proportion of correct responses were significantly higher among females compared to males (70.8% versus 63.3%,  $p < 0.017$ ) and women submitted fewer incorrect responses than men (9.1% versus 16.6%), while “don’t know” responses were equal (20.1% versus 20.2%) (see Table 1). Men’s and women’s responses were significantly different on each item of the D-Lit. The largest sex difference was 15.5% wherein 90.3% of females compared with 74.8% of males correctly answered “true” for the item “sleeping too much or too little may be a sign of men’s depression”. The second largest difference (14.3%) was found in correct (False) responses to “men with depression may feel guilty when they are not at fault” (86.9% female versus 72.6% male) followed by “depression does not affect men’s memory and concentration” (12.7%; 80.5% female versus 67.8% male). Males responded incorrectly more often than females to the item “men with depression often speak in a rambling and disjointed way” (10.2%; 28.5% male versus 18.3% female), “men with depression often hear voices that are not there” (10%; 24.2% male versus 14.2% female) and “having several distinct personalities may be a sign of men’s depression” (9.3%; 42.8% male versus 33.5% female). Corresponding to these incorrect response differences were a higher proportion of females answering “don’t know” to these three items (45.8% versus 36.9%; 41.7% versus 35.3%; 34.6% versus 28.9%).

Suicide literacy

Overall, the proportion of correct responses was 53.7%, with 14.9% incorrect and 31.3% “don’t know” responses (see Figure 2). The items with the highest proportion of correct responses (which was “false”, in both cases) were “men who have thoughts about suicide should not tell others about it” (84.6%) and “most men who suicide are psychotic” (71%). The highest proportion of incorrect answers was given in

Depression Literacy Scale			
Base = Canada-wide (n.901)			
	Selected 'True'	Selected 'False'	Selected 'Don't know'
Men with depression often speak in a rambling and disjointed way	23.2%	35.3%	41.5%
Men with depression may feel guilty when they are not at fault	80.0%	6.0%	14.0%
Loss of confidence and poor self-esteem may be a symptom of men's depression	89.8%	4.5%	5.6%
Men with depression often hear voices that are not there	19.0%	42.3%	38.6%
Sleeping too much or too little may be a sign of men's depression	82.8%	6.9%	10.3%
Eating too much or losing interest in food may be a sign of men' depression	81.0%	7.6%	11.4%
Depression does not affect men's memory and concentration	9.6%	74.4%	16.0%
Having several distinct personalities may be a sign of men's depression	38.0%	30.2%	31.8%
Most men with depression need to be hospitalized	8.3%	73.0%	18.7%
Many famous men have suffered from depression	82.5%	3.9%	13.6%
Proportion of Total Correct Responses		67.1%	
Proportion of Total Incorrect Responses		12.7%	
Proportion of Total Don't Know Responses		20.2%	

Figure 1. Itemized responses to D-Lit questionnaire.



Table 1. Results of Chi-square test for D-Lit by sex.

Question	Males (%) (n = 452)			Females (%) (n = 449)			$\chi^2$	p Value
	Selected “True”	Selected “False”	Selected “Don’t know”	Selected “True”	Selected “False”	Selected “Don’t know”		
1. Men with depression often speak in a rambling and disjointed way. <b>(False)</b>	28.5	34.6	36.9	18.3	36.0	45.8	14.657	0.001
2. Men with depression may feel guilty when they are not at fault. <b>(True)</b>	72.6	10.1	17.3	86.9	2.1	11.0	35.953	0.000
3. Loss of confidence and poor self-esteem may be a symptom of men’s depression. <b>(True)</b>	86.3	6.5	7.3	93.2	2.8	4.0	11.796	0.003
4. Men with depression often hear voices that are not there. <b>(False)</b>	24.2	40.4	35.3	14.2	44.2	41.7	15.013	0.001
5. Sleeping too much or too little may be a sign of men’s depression. <b>(True)</b>	74.8	10.7	14.5	90.3	3.4	6.3	38.478	0.000
6. Eating too much or losing interest in food may be a sign of men’s depression. <b>(True)</b>	75.0	9.8	15.2	86.6	5.5	7.9	19.883	0.000
6. Depression does not affect men’s memory and concentration. <b>(False)</b>	14.4	67.8	17.8	5.1	80.5	14.4	26.849	0.000
7. Having several distinct personalities may be a sign of men’s depression. <b>(False)</b>	42.8	28.3	28.9	33.5	31.9	34.6	8.592	0.014
8. Most men with depression need to be hospitalized. <b>(False)</b>	11.3	73.5	15.2	5.5	72.4	22.1	14.922	0.001
9. Many famous men have suffered from depression. <b>(True)</b>	79.3	7.3	13.3	85.4	0.7	13.9	26.741	0.000

\* $p < 0.05$ ,  $df = 2$ .

<b>Suicide Literacy Scale</b>			
Base = Canada-wide [n.901]			
	Selected “True”	Selected “False”	Selected “Don’t know”
<b>Men who have thoughts about suicide should not tell others about it</b>	6.7%	84.6%	8.7
<b>Most men who suicide are psychotic</b>	5.2%	71.9%	22.9
<b>Men talking about suicide always increases the risk of suicide</b>	33.0%	40.6%	26.4
<b>Not all men who attempt suicide plan their attempt in advance</b>	58.1%	11.1%	30.8
<b>Very few men have thoughts about suicide</b>	11.2%	56.3%	32.5
<b>Men are more likely to die by suicide than women</b>	36.6%	17.9%	45.6
<b>Men who want to attempt suicide can change their mind quickly</b>	32.1%	23.1%	44.8
<b>There is a strong relationship between men’s alcoholism and suicide</b>	49.8%	11.2%	39.0
<b>Proportion of Total Correct Responses</b>	53.7%		
<b>Proportion of Total Incorrect Responses</b>	14.9%		
<b>Proportion of Total Don’t Know Responses</b>	31.3%		

Figure 2. Itemized responses to LOSS questionnaire.

response to the items, “men talking about suicide always increase the risk of suicide” (33% incorrectly answered “true”) and “men who want to attempt suicide can change their mind quickly” (32.1% incorrectly answered “false”). A high proportion of respondents (44.8%) also answered “don’t know” to the latter item, in addition to the items, “men are more likely to die by suicide than women” (45.6%) and “there is a strong relationship between men’s alcoholism and suicide” (39%).

A z-test performed at 95% confidence indicated no significant difference between male versus female response rates ( $p < 0.219$ ). Males answered fewer items correctly (51.6%) than females (55.7%) and had a higher proportion of incorrect answers (18.6% versus 11.5%), while overall, a slightly higher proportion of females used the “don’t know” response option compared to males (32.8% versus 29.8%) (Table 2). Men’s and women’s responses differed on all items of the LOSS, except for, “men talking about suicide always

Table 2. Results of Chi-square test for LOSS by sex.

Question	Males (%) (n = 452)			Females (%) (n = 449)			$\chi^2$	p Value
	Selected "True"	Selected "False"	Selected "Don't know"	Selected "True"	Selected "False"	Selected "Don't know"		
1. Men who have thoughts about suicide should not tell others about it. <b>(False)</b>	10.1	77.0	12.9	3.5	91.8	4.7	37.955	0.000
2. Most men who suicide are psychotic. <b>(False)</b>	8.2	68.4	23.5	2.5	75.1	22.4	15.448	0.000
3. Men talking about suicide always increase the risk of suicide. <b>(False)</b>	34.3	39.4	26.3	31.8	41.6	26.6	0.702	0.704
4. Not all men who attempt suicide plan their attempt in advance. <b>(True)</b>	52.0	16.0	32.0	63.8	6.4	29.7	24.334	0.000
5. Very few men have thoughts about suicide. <b>(False)</b>	17.4	53.8	28.8	5.4	58.7	35.9	33.495	0.000
6. Men are more likely to die by suicide than women. <b>(True)</b>	35.3	22.3	42.5	37.8	13.8	48.4	11.140	0.004
7. Men who want to attempt suicide can change their mind quickly. <b>(True)</b>	36.3	24.1	39.6	28.1	22.1	49.8	10.272	0.006
8. There is strong relationship between men's alcoholism and suicide. <b>(True)</b>	50.9	16.6	32.6	48.7	6.1	45.1	31.074	0.000

\* $p < 0.05$ ,  $df = 2$ .

increase the risk of suicide". A higher proportion of females compared to males responded correctly to the first six items, and the largest sex differences within the six items were in correct responses to "men who have thoughts about suicide should not tell others about it" (14.8%; 91.8% females versus 77% males), "very few men have thoughts about suicide" (12%; 17.4% males versus 5.4% females), "not all men who attempt suicide plan their attempt in advance" (11.8%; 63.8% females versus 52% males), and "there is a strong relationship between men's alcoholism and suicide" (10.5%; 16.6% males versus 6.1% females).

## Discussion and conclusion

The current study is the first to examine Canadian perspectives about men's depression and suicide literacy. In the specific context of men's depression, our findings support work from Australia using the D-Lit tool (Griffiths et al., 2008). The current study confirms misconceptions and uncertainty about men's depression wherein many depressive symptoms are poorly understood or differentiated from other mental illnesses. For example, only 30.2% and 35.3% of respondents correctly answered "false" to "having several distinct personalities may be a sign of men's depression" and "men with depression often speak in a rambling and disjointed way". Similarly, less than half (42.3%) of the respondents correctly selected "false" for the item "men with depression hear voices that are not there". Strongly evident are challenges for the respondents to differentiate mental illnesses and define specific depressive symptoms. Especially concerning, with respect to these findings, is the relatively low levels of mental illness literacy with respect to depression. Not only is depression among the most common mental disorders, it is arguably the most widely researched and the focus of the greatest efforts with respect to public education (Jorm, 2012).

In addition to concerning overall levels of mental health literacy, sex comparisons suggest that females have higher literacy about men's depression than men themselves. Offered by the current study findings also are some insights to men's low rates of formally diagnosed depression as well as their reticence for seeking professional care for depression previously described by Johnson, Oliffe, Kelly, Galdas, & Ogrodniczuk (2012). Specifically, the current study in confirming men's low depression literacy levels provides empirical weight toward understanding and perhaps addressing long standing male patterns concerning poor uptake of mental health care services. Reflected in our sex comparison findings are dominant ideologies of masculinity associated with poorer mental health practices previously described by Swami (2012) amid support for Bissett's (2007) assertion that men might best respond to targeted health information presented in non-judgmental or marginalizing ways. As such, public health initiatives that are goal-driven and geared specifically towards improving men's health literacy levels may prove key to more fully diagnosing and treating male depression (Fleming et al., 2014). The temptation of course with sex comparisons is to use difference to argue disparity or inequality in asserting the need for an "either/or" focus, which in the current study might beckon approaches targeting males. Our view, however, is that designing gender sensitive and specific (i.e. discrete men-centered and women-centered approaches) public health awareness programs to increase literacy about male depression would be a productive path forward. After all, we know that men's depression is intricately connected to the health of women, children and other men (Oliffe et al., 2011b, 2012).

The overall findings reveal the concerning and strikingly poor overall literacy levels with respect to male suicide. Apparent is a lack of knowledge about males being at higher risk of suicide than females in Western countries, along with

misperceptions about the risks of talking about suicidal thoughts or the potential for waylaying plans to take one's life. These findings have significant implications. For example, that 33% of respondents incorrectly answered "true" the item "men talking about suicide always increases the risk of suicide" affirms the stigma around suicide amid fueling the silences and stoicism regards male suicide in ways that inhibit and dislocate prevention efforts. The sex differences also reveal females as more informed than males about male suicide with the exception of knowing that men can change their mind about suicide quickly and the connectedness between alcohol use and male suicide. That male respondents had greater knowledge of these two items might inadvertently reveal many men's direct experiences, as previously reported elsewhere (Batterham et al., 2013; Chan et al., 2014; Griffiths et al., 2008). Recognizing these sex differences as not statistically significant, public health awareness programs may benefit from a general focus on de-stigmatizing and raising awareness about male suicide, and the underlying associated behaviors more broadly as a means to increasing literacy levels in Canada.

Study limitations include the use of adapted survey questionnaires without face validity being used with participants, and the exclusion of survey questionnaire items in the absence of previous empirical testing. Respondents may have also been more interested in mental health compared with the general population in deciding to complete the survey questionnaire. That said, the current study, by reporting the results of individual items in the Canadian context provides much needed locale and sex specific insights about literacy levels regards male depression and suicide.

## Conclusion

In May 2006, the Standing Senate Committee on Social Affairs, Science and Technology released a report on mental health highlighting the need to improve mental health literacy; however, there have been few targeted initiatives in Canada (Wang et al., 2007). In light of the current study findings and given the evidence that mental health knowledge can increase with education, which in turn reduces stigma and improves help-seeking behaviors and treatment adherence in patients with depression (Gabriel & Violato, 2010; Jorm, 2012), concerted efforts are needed to advance mental health literacy about men's depression and suicide (Batterham et al., 2013; Calear et al., 2014). Based on the current study findings, it is also important to strategize such efforts by designing, implementing and formally evaluating gender sensitive and specific programs dedicated to advancing Canadian's literacy levels about men's depression and suicide.

## Acknowledgements

This work was supported Movember Canada for the Men's Depression and Suicide Network ([www.menshealthresearch.ubc.ca](http://www.menshealthresearch.ubc.ca)) by [grant number # 11R18296].

## Declaration of interest

The authors report that they have no conflicts of interest.

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